Technology in Rural Transportation

A recent study documented more than eighty proven, cost-effective, "low-tech" solutions to rural transportation needs, most developed or implemented by local transportation professionals. One of these solutions is outlined below:

Learn all about the simple solutions on the Internet at http://inform.enterprise.prog.org

The simple solutions report is available from Hau To at (503) 892-2533, or email: to@crc-corp.com

Smart Call Boxes

Overall goal:	The goals of the FOT were to demonstrate the feasibility of using smart call boxes as an alternative to providing electrical and telephone conduits to the roadside terminal, and evaluate their potential cost-effectiveness, and identify institutional issues, which might affect their deployment.
Technical approach:	The Smart Call Box Field Operational Test (FOT) evaluated the feasibility and cost-effectiveness of using smart call boxes for five data processing and transmission tasks: traffic census, incident detection, hazardous weather reporting, dynamic message sign control, and video surveillance. Evaluation focused on cost-effectiveness, with effectiveness understood to include both functional adequacy and challenges, and costs to include capital costs, telephone charges, and maintenance costs. Test systems were designed and installed by two vendors, GTE Telecommunications Systems of Irvine, California and U.S. Commlink of San Leandro, California.
Current status:	The operational test has been completed and no future activities are currently planned.
Location / geographic scope:	Test sites were set up along major freeways in the San Diego area, including I-5, I-805, I-8, SR 175, SR 63 and I-15.
Agencies involved:	The Smart Call Box FOT was funded by the Federal Highway Administration (FHWA) and the State of California, acting through the Caltrans Office of New Technology and Research. It was carried out by a

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	consortium (the FOT Partners) consisting of Caltrans District 11, the Border Division of the California Highway Patrol (CHP), and the San Diego Service Authority for Freeway Emergencies (SAFE). TeleTran Tek Services provided project management support.
Cost information:	It appears that at most sites all types of smart call box systems have significant capital cost advantages over hardwire systems. This cost advantage is due primarily to the extra costs of trenching, wiring, and jacking of conduit under the traveled way that are involved in hardwire systems. Even where external A/C power was required, the cost advantage was substantial, because distances to the nearest access points for the telephone system tended to be greater than those to the power system; however, the greatest cost advantages were for systems that did not require A/C power. The final report on this project provides detailed cost information.
Key contacts:	Dr James H. Banks, San Diego State University, (619) 594-7051
Have goals been achieved?	The goals of the FOT were to demonstrate the feasibility of using smart call boxes as an alternative to providing electrical and telephone conduits to the roadside terminal, and evaluate their potential cost-effectiveness, and identify institutional issues, which might affect their deployment.
Solution timeline:	Funding for the project was secured in 1993. The FOT took place from 1995–1996. The final report was published in 1997.

U.S. Department of Transportation
Federal Highway Administration

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